

B1 wherein the alloy has a stress relaxation ratio of 10% or less.

5. (Twice Amended) A high-mechanical strength copper alloy, consisting essentially of 3.5 to 4.5% by mass of Ni, 0.7 to 1.0% by mass of Si, 0.01 to 0.20% by mass of Mg, 0.05 to 1.5% by mass of Sn, 0.2 to 1.5% by mass of Zn, and further 0.005 to 2.0% by mass in the sum total of at least one element selected from the group consisting of 0.005 to 0.3% by mass of Ag, 0.005 to 2.0% by mass of Co and 0.005 to 0.2% by mass of Cr, and less than 0.005% by mass (including 0% by mass) of S, with the balance being made of Cu and inevitable impurities,

wherein a diameter of a crystal grain in the alloy is from more than 0.001 mm to 0.025 mm; and the ratio (a/b), between a longer diameter a of a crystal grain on a cross section parallel to a direction of final plastic working, and a longer diameter b of a crystal grain on a cross section perpendicular to the direction of final plastic working, is 1.5 or less,

wherein the alloy has a tensile strength of 800 N/mm or more, and

wherein the alloy has a stress relaxation ratio of 10% or less.

B3 12. (Amended) A high-mechanical strength copper alloy, consisting essentially of 3.5 to 4.5% by mass of Ni, 0.7 to 1.0% by mass of Si, 0.01 to 0.20% by mass of Mg, 0.05 to 1.5% by mass of Sn, 0.2 to 1.5% by mass of Zn, and less than 0.005% by mass (including 0% by mass) of S, with the balance being made of Cu and inevitable impurities,

wherein a diameter of a crystal grain in the alloy is from more than 0.001 mm to 0.025 mm; and the ratio (a/b), between a longer diameter a of a crystal grain on a cross section parallel to a

direction of final plastic working, and a longer diameter b of a crystal grain on a cross section perpendicular to the direction of final plastic working, is 1.5 or less.

wherein the alloy has a tensile strength of 800 N/mm² or more,

wherein the alloy does not contain carbon, and

wherein the alloy has a stress relaxation ratio of 10% or less.

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14. (Amended) A high-mechanical strength copper alloy, consisting essentially of 3.5 to 4.5% by mass of Ni, 0.7 to 1.0% by mass of Si, 0.01 to 0.20% by mass of Mg, 0.05 to 1.5% by mass of Sn, 0.2 to 1.5% by mass of Zn, and less than 0.005% by mass (including 0% by mass) of S, with the balance being made of Cu and inevitable impurities,

wherein a diameter of a crystal grain in the alloy is from more than 0.001 mm to 0.025 mm; and the ratio (a/b), between a longer diameter a of a crystal grain on a cross section parallel to a direction of final plastic working, and a longer diameter b of a crystal grain on a cross section perpendicular to the direction of final plastic working, is 1.5 or less,

wherein the alloy has a tensile strength of 800 N/mm² or more,

wherein the alloy does not contain carbon and molybdenum, and

wherein the alloy has a stress relaxation ratio of 10% or less.

⑭

16. (Amended) A high-mechanical strength copper alloy, consisting essentially of 3.5 to 4.5% by mass of Ni, 0.7 to 1.0% by mass of Si, 0.01 to 0.20% by mass of Mg, 0.05 to 1.5% by mass of Sn, 0.2 to 1.5% by mass of Zn, and further 0.005 to 2.0% by mass in the sum total of at least one

element selected from the group consisting of 0.005 to 0.3% by mass of Ag, 0.005 to 2.0% by mass of Co and 0.005 to 0.2% by mass of Cr, and less than 0.005% by mass (including 0% by mass) of S, with the balance being made of Cu and inevitable impurities,

wherein a diameter of a crystal grain in the alloy is from more than 0.001 mm to 0.025 mm; and the ratio (a/b), between a longer diameter a of a crystal grain on a cross section parallel to a direction of final plastic working, and a longer diameter b of a crystal grain on a cross section perpendicular to the direction of final plastic working, is or less 1.5,

wherein the alloy has a tensile strength of 800 N/mm² or more,

wherein the alloy does not contain carbon, and

wherein the alloy has a stress relaxation ratio of 10% or less.

18. (Amended) A high-mechanical strength copper alloy, consisting essentially of 3.5 to 4.5% by mass of Ni, 0.7 to 1.0% by mass of Si, 0.01 to 0.20% by mass of Mg, 0.05 to 1.5% by mass of Sn, 0.2 to 1.5% by mass of Zn, and further 0.005 to 2.0% by mass in the sum total of at least one element selected from the group consisting of 0.005 to 0.3% by mass of Ag, 0.005 to 2.0% by mass of Co and 0.005 to 0.2% by mass of Cr, and less than 0.005% by mass (including 0% by mass) of S, with the balance being made of Cu and inevitable impurities,

wherein a diameter of a crystal grain in the alloy is from more than 0.001 mm to 0.025 m; and the ratio (a/b), between a longer diameter a of a crystal grain on a cross section parallel to a direction of final plastic working, and a longer diameter b of a crystal grain on a cross section perpendicular to the direction of final plastic working, is or less 1.5,

wherein the alloy has a tensile strength of 800 N/mm or more,

wherein the alloy does not contain carbon and molybdenum, and

wherein the alloy has a stress relaxation ratio of 10% or less.

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